

SEQUENCE LISTING

<110> Kubin, Marek Z
Goodwin, Raymond G

<120> NK Cell Activation Inducing Ligand (NAIL) DNA and
Polypeptides and Uses Thereof

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<150> 60/079,845
<151> 1998-03-27

<150> 60/096,750.
<151> 1998-08-17

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<170> PatentIn Ver. 2.0

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<212> DNA
<213> Homo sapiens

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Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
50 55 60

His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
65 70 75 80

Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
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Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
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Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
115 120 125

Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly
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Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
145 150 155 160

Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
165 170 175

Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
180 185 190

Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn
195 200 205

Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro
210 215 220

Phe Leu Val Ile Ile Val Ile Leu Ser Ala Leu Phe Leu Gly Thr Leu
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Ala Cys Phe Cys Val Trp Arg Arg Lys Arg Lys Glu Lys Gln Ser Glu
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Thr Ser Pro Lys Glu Phe Leu Thr Ile Tyr Glu Asp Val Lys Asp Leu
260 265 270

Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly
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Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser
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Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys
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<213> Homo sapiens

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<213> Mus musculus

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Ser Gly Lys Pro Val Gln Leu Arg Pro Ser Asn Ile Gln Thr Lys Asp
35 40 45

Val Ser Val Gln Trp Lys Lys Thr Glu Gln Gly Ser His Arg Lys Ile
50 55 60

Glu Ile Leu Asn Trp Tyr Asn Asp Gly Pro Ser Trp Ser Asn Val Ser
65 70 75 80

Phe Ser Asp Ile Tyr Gly Phe Asp Tyr Gly Asp Phe Ala Leu Ser Ile
85 90 95

Lys Ser Ala Lys Leu Gln Asp Ser Gly His Tyr Leu Leu Glu Ile Thr
100 105 110

Asn Thr Gly Gly Lys Val Cys Asn Lys Asn Phe Gln Leu Ile Leu
115 120 125

Asp His Val Glu Thr Pro Asn Leu Lys Ala Gln Trp Lys Pro Trp Thr
130 135 140

Asn Gly Thr Cys Gln Leu Phe Leu Ser Cys Leu Val Thr Lys Asp Asp
145 150 155 160

Asn Val Ser Tyr Ala Phe Trp Tyr Arg Gly Ser Thr Leu Ile Ser Asn
165 170 175

Gln Arg Asn Ser Thr His Trp Glu Asn Gln Ile Asp Ala Ser Ser Leu
180 185 190

His Thr Tyr Thr Cys Asn Val Ser Asn Arg Ala Ser Trp Ala Asn His
195 200 205

Thr Leu Asn Phe Thr His Gly Cys Gln Ser Val Pro Ser Asn Phe Arg
210 215 220

Phe Leu Pro Phe Gly Val Ile Ile Val Ile Leu Val Thr Leu Phe Leu
225 230 235 240

Gly Ala Ile Ile Cys Phe Cys Val Trp Thr Lys Lys Arg Lys Gln Leu
245 250 255

Gln Phe Ser Pro Lys Glu Pro Leu Thr Ile Tyr Glu Tyr Val Lys Asp

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Ser Arg Ala Ser Arg Asp Gln Gln Gly Cys Ser Arg Ala Ser Gly Ser
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Pro Ser Ala Val Gln Glu Asp Gly Arg Gly Gln Arg Glu Leu Asp Arg
290 295 300

Arg Val Ser Glu Val Leu Glu Gln Leu Pro Gln Gln Thr Phe Pro Gly
305 310 315 320

Asp Arg Gly Thr Met Tyr Ser Met Ile Gln Cys Lys Pro Ser Asp Ser
325 330 335

Thr Ser Gln Glu Lys Cys Thr Val Tyr Ser Val Val Gln Pro Ser Arg
340 345 350

Lys Ser Gly Ser Lys Lys Arg Asn Gln Asn Tyr Ser Leu Ser Cys Thr
355 360 365

Val Tyr Glu Glu Val Gly Asn Pro Trp Leu Lys Ala His Asn Pro Ala
370 375 380

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35 40 45

Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
50 55 60

His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
65 70 75 80

Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
85 90 95

Ala Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
100 105 110

Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
115 120 125

Val Glu Lys Pro Arg Leu Gln Gly Gln Lys Ile Leu Asp Arg Gly
130 135 140

Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
145 150 155 160

Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
165 170 175

Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
180 185 190

Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn
195 200 205

Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Arg Ser Cys
210 215 220

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Glu Gly
225 230 235 240

Ala Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
325 330 335

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
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Pro Gly Lys
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35 40 45

Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
50 55 60

His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
65 70 75 80

Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
85 90 95

Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
100 105 110

Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
115 120 125

Val Glu Lys Pro Arg Leu Gln Gly Gln Lys Ile Leu Asp Arg Gly
130 135 140

Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
145 150 155 160

Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
165 170 175

Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
180 185 190

Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn
195 200 205

Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Arg Ser Gly
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Ser Ser Asp Tyr Lys Asp Asp Asp Asp Lys Gly Ser Ser His His His
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His His His

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Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val
35 40 45

Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
50 55 60

His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
65 70 75 80

Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
85 90 95

Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
 100 105 110
 Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
 115 120 125
 Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly
 130 135 140
 Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
 145 150 155 160
 Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
 165 170 175
 Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
 180 185 190
 Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn
 195 200 205
 Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Arg Ser Gly
 210 215 220
 Ser Ser Arg Met Lys Gln Ile Glu Asp Lys Ile Glu Glu Ile Leu Ser
 225 230 235 240
 Lys Ile Tyr His Ile Glu Asn Glu Ile Ala Arg Ile Lys Lys Leu Ile
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20 25 30

Met Thr Val Val Ser Gly Ser Asn Val Thr Leu Asn Ile Ser Glu Ser
35 40 45

Leu Pro Glu Asn Tyr Lys Gln Leu Thr Trp Phe Tyr Thr Phe Asp Gln
50 55 60

Lys Ile Val Glu Trp Asp Ser Arg Lys Ser Lys Tyr Phe Glu Ser Lys
65 70 75 80

Phe Lys Gly Arg Val Arg Leu Asp Pro Gln Ser Gly Ala Leu Tyr Ile
85 90 95

Ser Lys Val Gln Lys Glu Asp Asn Ser Thr Tyr Ile Met Arg Val Leu
100 105 110

Lys Lys Thr Gly Asn Glu Gln Glu Trp Lys Ile Lys Leu Gln Val Leu
115 120 125

Asp Pro Val Pro Lys Pro Val Ile Lys Ile Glu Lys Ile Glu Asp Met
130 135 140

Asp Asp Asn Cys Tyr Leu Lys Leu Ser Cys Val Ile Pro Gly Glu Ser
145 150 155 160

Val Asn Tyr Thr Trp Tyr Gly Asp Lys Arg Pro Phe Pro Lys Glu Leu
165 170 175

Gln Asn Ser Val Leu Glu Thr Thr Leu Met Pro His Asn Tyr Ser Arg
180 185 190

Cys Tyr Thr Cys Gln Val Ser Asn Ser Val Ser Ser Lys Asn Gly Thr
195 200 205

Val Cys Leu Ser Pro Pro Cys Thr Leu Ala Arg Ser Phe Gly Val Glu
210 215 220

Trp Ile Ala Ser Trp Leu Val Val Thr Val Pro Thr Ile Leu Gly Leu
225 230 235 240

Leu Leu Thr